

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A debarking mechanism ~~(1)~~ for the decortication or pretreatment of trees ~~(2)~~ for separately performed final barking and for the expulsion of at least some of the removed barks from a wood flow passing through the debarking mechanism, said debarking mechanism comprising a ~~number~~plurality of rotatable debarking shafts ~~(3, 3')~~ extending parallel to ~~the~~an advancing direction (A) of ~~the~~ trees ~~(2)~~ to be fed therethrough and provided with a number of teeth ~~(4)~~ extending beyond ~~the~~a circumferential surface of the shaft ~~(3, 3')~~ and adapted to strip bark off the presently processed trees ~~(2)~~ transversely to ~~the~~a lengthwise direction of the trees and at the same time to convey the trees transversely relative to said shafts ~~(3, 3')~~, and said shafts ~~(3, 3')~~, together with the teeth ~~(4)~~ thereof, being adapted to ~~constitute~~comprise at least part of a support surface, upon which the ~~presently processed trees (2)~~ travel through the debarking mechanism ~~(1)~~, and said debarking shafts ~~(3, 3')~~ being adapted relative to each other ~~in such a way that the presently processed trees (2) perform~~move ~~in~~ a circular motion (C) in the debarking mechanism, in which motion the trees ~~(2)~~ upon the support surface ~~constituted~~formed by the debarking shafts ~~(3, 3')~~ are forced by the rotatory motion ~~(5)~~ of the debarking shafts ~~(3, 3')~~ in their turn into ~~the~~an upper position, from which ~~they~~the trees roll down above the other trees ~~(2)~~ in the debarking mechanism ~~(1)~~ into ~~the~~a lower position, ~~characterized in that the~~wherein an uppermost debarking shaft ~~(3')~~ ~~has been~~is fitted together with a guiding surface ~~(8)~~, said guiding surface together with the uppermost debarking shaft ~~(3')~~ forming a slot ~~(9)~~ convergent in the direction of rotation ~~(5)~~ of the debarking shaft ~~(3')~~.

2. (Currently Amended) A debarking mechanism as set forth in claim 1, ~~characterized in that~~wherein the guiding surface ~~(8)~~ is provided with grooves ~~(10)~~ for ~~getting~~interlocking the said guiding surface and the teeth ~~(4)~~ of the uppermost debarking shaft ~~(3')~~ interlocked.

3. (Currently Amended) A debarking mechanism as set forth in claim 1 ~~or 2~~, ~~characterized in that wherein~~ the guiding surface (8) ~~consists comprises~~ of a freely rotating roller.

4. (Currently Amended) A debarking mechanism as set forth in claim 1 ~~or 2~~, ~~characterized in that wherein~~ the guiding surface (8) ~~consists comprises~~ of a rotatable roller.

5. (Currently Amended) A debarking mechanism as set forth in claim 1, ~~characterized in that wherein~~ at least one of the debarking shafts, ~~most preferably the uppermost debarking shaft (2'), has been moved~~ sideways towards ~~the an~~ inner part (6) of the debarking mechanism (4), said sideways debarking shaft ~~thus forcing the trees (2) moved by the lower debarking shafts (3) to change their direction of motion so that when dividing the motion into a horizontal and a vertical component, the horizontal component points at the inner part (6) of the debarking mechanism (4).~~

6. (Currently Amended) A debarking mechanism as set forth in claim 1, ~~characterized in that the wherein~~ a circumferential speed of the debarking shaft (3, 3') ~~has been chosen to be the larger is greater~~ the higher the debarking shaft (3, 3') lies.

7. (New) A debarker for removing bark from trees comprising:

a plurality of rotating debarking shafts arranged side-by-side and in a debarking plane, said shafts being parallel to an advancing direction of the trees through the debarker and include debarking features projecting from an outer shaft surface;

the debarking shafts in the debarking plane forming a support surface for the trees in the debarker, the debarking shafts rotating in a direction that deflects the trees and removed bark upward in a direction substantially transverse to the advancing direction;

an offset debarking shaft parallel to and adjacent one of the debarking shafts in the debarking plane, the offset debarking shaft including debarking features and the offset debarking shaft being offset in a direction upward from the debarking plane;

a guiding surface parallel to and upwards of the offset debarking shaft, and

a slot between the guiding surface and the offset debarking shaft, wherein the slot converges along a direction aligned with a rotational direction of the debarking shaft.

8. (New) A debarker as in claim 7 wherein the guiding surface is a rotating shaft without debarking features.

9. (New) A debarker as in claim 7 wherein the debarking features are teeth extending outward from an outer cylindrical surface of the shafts.

10. (New) A debarker as in claim 7 wherein the guiding surface includes grooves transverse to the offset debarking shaft and said grooves interlaced with the debarking features on the offset debarking shaft.

11. (New) A debarker as in claim 1 wherein the guiding surface comprises at least one freely rotating roller.

12. (New) A debarker as in claim 1 wherein the guiding surface comprises a rotating roller.

13. (New) A debarker as in claim 1 further comprising a upstanding support surface opposite to the debarking shafts and a tree vessel defined by and between the upstanding support surface and the debarking shafts.

14. (New) A method for removing bark from trees in a debarker having a plurality of debarking shafts arranged side-by-side and in a debarking plane, an offset debarking

shaft parallel to and adjacent one of the debarking shafts in the debarking plane, and a guiding surface parallel to and upwards of the offset debarking shaft, the method comprising:

- advancing trees through the debarker in a direction generally parallel to debarking shafts and the debarking plane;

- removing bark from the trees by rotating the debarking shafts which include debarking teeth that cut bark from trees abutting the rotating shafts;

- rotating and cutting by the debarking shafts forces trees in the debarker to be deflected upwards, wherein the upward deflection causes bark removed from the trees to advance upward to the offset debarking shaft;

- advancing the removed bark over the rotating offset debarking shaft and through a convergent slot formed between the offset debarking shaft and the guiding surface, wherein the slot is too narrower to pass the trees.

15. (New) A method as in claim 14 wherein the direction of advancement of the trees through the debarker is generally horizontal and the direction in which trees are deflected upward in the debarker is generally vertical.

16. (New) A method as in claim 14 wherein the guiding surface is a rotating shaft without teeth and the rotation of the guiding surface and the offset debarking shaft draws bark through the slot.

17. (New) A method as in claim 14 wherein the guiding surface includes grooves transverse to the offset debarking shaft and the grooves interlace with the teeth of the offset debarking shaft.

18. (New) A method as in claim 14 wherein the guiding surface includes at least one freely rotating roller and the method further comprises turning the guiding surface by the advancement of bark through the slot.

19. (New) A method as in claim 14 wherein the guiding surface includes at a driven rotating roller and the method further comprises advancing the bark through the slot by the combined rotations of the rotating roller and the offset debarking shaft.

20. (New) A method as in claim 14 wherein the upward deflection of the trees includes a generally oval circulation of trees in the debarker, wherein the oval circulation is transverse to the debarking shafts.